

**Work Order ID 85819**

June-15-12 1:31:24 PM

**\*85819\***

Page 1

Item ID: D205-634-041

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 15/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: *MLJ*Date: *12/06/15* Tooling:

Date:

Run Start **\*NR1\***

QC:

Date: *12/06/15* SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2580-041	(DEO) Rev.E								
100		0.00							
<b>*100*</b>	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005								
110		0.00							
<b>*110*</b>	BENDING MACHINE - SKIDTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	1-Bend as per program D2580.C on CNC Bender and Folio 16								
	2-Cut tubes as per Dwg. D2580								
	3- scribe batch# in aft end of tube								

*N/A**DP 12-7-3*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Date:

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Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

0.00

**\*120\***

Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends and remove bending marks

2- Prepare tube for welding as per QSI 004

① SAD 12-07-10

130

QC5- Inspect part completeness to step on W/O

0.00

**\*130\***

QC

Memo

0.00

Quality Control

1 Ø BE 12-07-10

W/O:		WORK ORDER CHANGES					
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Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

**\*140\***

Skid tubes

Skid tubes

Memo

0.00

1-Weld step D2576 as per Dwg. D2580 and QSI 004  
A/R Aluminum Rod *mid 2130**BE 12/07/10*

2-Grind welds on step as per Dwg D2580

*> SAD 12-07-10*3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002  
and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x 17G to start  
expansion and finish with 1/2 x 18G to achieve dwg dimension.*DC 12/07/10*4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd  
saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit  
web. Debur

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

*DC 12/07/12*

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

150

QC10- Inspect visual per QSI004- ground welds

0.00

**\*150\***

QC

*Fwd CAP only*

Memo

0.00

*91  
12/07/12*

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

QC5- Inspect part completeness to step on W/O

0.00

**\*160\***

QC

Memo

0.00

Quality Control

170

Pressure Wash per QSI005 4.3

0.00

**\*170\***

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*180\***

Powdercoat

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

9:20  
3200F  
9:50

M121841

1 76 12-7-13  
IX Ø M/F 12/07/13

**Dart Aerospace Ltd**

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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC3- Inspect Part Finish

0.00

**\*190\***

QC

Memo

0.00

Quality Control

1x 4 94 12/07/16

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

0.00

**\*200\***

HandFinish

Hand Finishing

**Memo**

0.00

1-Install inserts &amp; wearplates &amp; Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 11121130Sikaflex expire date: 111103

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step &amp; Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291 11121130Sikaflex expire date: 1111035-Wing Walk as per Dwg D2580 and QSI 005 4.4  
Batch: 111171505

1-x p. J. H. 10716

W/O:		WORK ORDER CHANGES					
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Start Date: 15/06/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

**\*210\***

QC

Memo

0.00

DAS  
16  
2-89 12/10/12

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

Packaging

0.00

**\*220\***

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev:

PPD 86 372

12/4/12

230

QC21- Final Inspection - Work Order Release

0.00

**\*230\***

QC

Memo

0.00

Quality Control

12/7/24

12-07-24

W/O:		WORK ORDER CHANGES					
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Page 1

Work Order ID: 85819

**\*85819\***

Parent Item: D205-634-041

**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30  
KJ IPP Rev P 10.02.19  
per PAR09-043 EC verified by:DD  
IPP Rev. O 06.02.28 Added paperwork EC  
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q  
10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS  
PER ECN11-684 VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4202-1		Manufactured	No			140	Each	224.0000	20	20			

**\*D4202-1\***  
Spacer

\*\*

DC 12/07/10

Location	Loc Qty	Loc Code
B86003		
LG	184	
77727	5	
83263	179	
LG002	40	
78806	6	
79810	34	

(20)

D2580-1 Manufactured No

110 Each

4.0000

1

1

**\*D2580-1\***  
205 Skidtube bent detail

\*\*

DP 12-7-3

Location	Loc Qty	Loc Code
B85893		
LG	4	
76570	2	
77679	2	

(1)

D2576-3 Manufactured No

140 Each

77 0000

1

1

**\*D2576-3\***  
Step (maching detail)

\*\*

BE 12-07-10

Location	Loc Qty	Loc Code
LG	77	
74136	25	
82257	52	

1

W/O:		WORK ORDER CHANGES					
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\*D205-634-041\*

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2855

Manufactured No

200

Each

21.0000

1

1

\*D2855\*

Cap

\*\*

11

12/07/16

## Location

## Loc Qty

## Loc Code

FP002

21

1384952

65519

2

73347

16

75074

3

AN3-5A

Purchased

No

200

Each

964.0000

2

2

\*AN3-5A\*

Bolt

\*\*

11

12/07/14

## Location

## Loc Qty

## Loc Code

ST350

964

115371

46

117423

124

118626

31

119355

200

120187

500

121185

63

AN960JD10L

NAS1149D0332J

Purchased

No

200

Each

0.0000

2

2

\*AN960JD10L \* y

Washer

\*\*

11121011

(x2)

11

12/07/14

**Dart Aerospace Ltd**

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Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

2.108 000

50

50

\*AI S7-1032-130\*

Insert

\*\*

AL 11/02/16

## Location

## Loc Qty

## Loc Code

ST280

51

117717

27

118966

22

119775

2

ST282

2057

119530

73

120181

12

121444

1972

v50

AN3C4A

Purchased

No

200

Each

955.0000

50

50

\*AN3C4A\*

BOLT

\*\*

AL 11/02/16

## Location

## Loc Qty

## Loc Code

ST350

955

120187

31

120521

28

120769

38

121205

842

121556

16

11122151

x50

AN960C10L

NAS1149C0332

Purchased

No

200

Each

21.0000

50

50

\*AN960C10I \*

washer

\*\*

AL 11/02/16

## Location

## Loc Qty

## Loc Code

ST

21

107534

21

11122063

x50

June-15-12 1:31:28 PM

Shop Packet Print

Page 3

# Dart Aerospace Ltd

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Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200

Each

56.0000

1

1

**\*D3566-13\***

Gasket

\*\*

yl 12/07/16

Location

Loc Qty

Loc Code

FP

10

83351

10

FP002

46

76947

1

84880

45

x1

D3566-5

Manufactured No

200

Each

52.0000

1

1

**\*D3566-5\***

Gasket

\*\*

yl 12/07/16

Location

Loc Qty

Loc Code

FP

10

82275

10

FP002

42

80374

3

82274

6

84881

33

x1

D3566-1

Manufactured No

200

Each

95.0000

2

2

**\*D3566-1\***

Gasket

\*\*

yl 12/07/16

Location

Loc Qty

Loc Code

FP

-30

81619

2

FP002

125

68924

2

80919

3

83898

16

84879

72

x2

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Shop Packet Print

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**Dart Aerospace Ltd**

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Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-11

Manufactured No

200

Each

28 0000

1

1

\*D3564-11\*

Wearshoe

\*\*

HL 12/04/16

## Location

## Loc Qty

## Loc Code

FG

4

77056

4

B84871

xi

FP001

24

80341

2

83910

22

D3564-13

Manufactured No

200

Each

23.0000

1

1

\*D3564-13\*

Wearshoe

\*\*

HL 12/02/16

## Location

## Loc Qty

## Loc Code

FP001

1

71594

1

FP002

22

82249

22

xi

D3564-9

Manufactured No

200

Each

18.0000

1

1

\*D3564-9\*

Wearshoe

\*\*

HL 12/07/16

## Location

## Loc Qty

## Loc Code

FG

4

76950

4

FP001

14

67590

4

69943

1

82255

9

B85474

xi

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

June-15-12 1:31:28 PM

Page 6

Work Order ID: 85819

**\*85819\***

Parent Item: D205-634-041

**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

36.0000

1

1

**\*D3564-5\***

Wearshoe

\*\*

11/07/16

## Location

## Loc Qty

## Loc Code

FG

2

34806

2

FP001

34

77609

1

82254

8

84869

25

16

D2594-3

Manufactured No

200

Each

2,410.000

16

16

**\*D2594-3\***

O-Ring, 205 Skidtube

\*\*

11/07/16

## Location

## Loc Qty

## Loc Code

FP001

2410

65518

41

79496

984

79573

50

79755

1335

16

D2594-1

Manufactured No

200

Each

713.0000

16

16

**\*D2594-1\***

Plug, 205 Skidtube

\*\*

11/07/16

## Location

## Loc Qty

## Loc Code

FP001

98

73401

30

74442

18

79495

50

FP-A

615

73401

0

78590

205

84951

410

16

June-15-12 1:31:28 PM

Shop Packet Print

Page 6

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

LIST OF MATERIALS					
* ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

# GENERAL NOTES:

- 1) MATERIAL N/A
- 2) FINISH CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4 2 5 1) PER DART QSI 005 4 2  
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4 3 5 8) PER DART QSI 005 4 3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4 4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES. 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION NONE
- 7) WEIGHT D2580-041 = 34.5 lbs  
D2580-045 = 34.5 lbs  
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING ENSURE HOLES LINE-UP
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30 A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291
- 12) INSERT D2594-1 PLUG C/W D2594 3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580 041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED  
2011-08-29

SHOP COPY  
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ENGINEERING  
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SUBJECT TO AMENDMENT

WITHOUT NOTICE  
WORK ORDER  
NO. 85819 MLCJ  
12/06/15

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	98.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	MP	DRAWING NO	REV. E
MFG. APPR.	MP	D2580	SHEET 1 OF 8
APPROVED	MP	TITLE	SCALE
DE APPR	MP	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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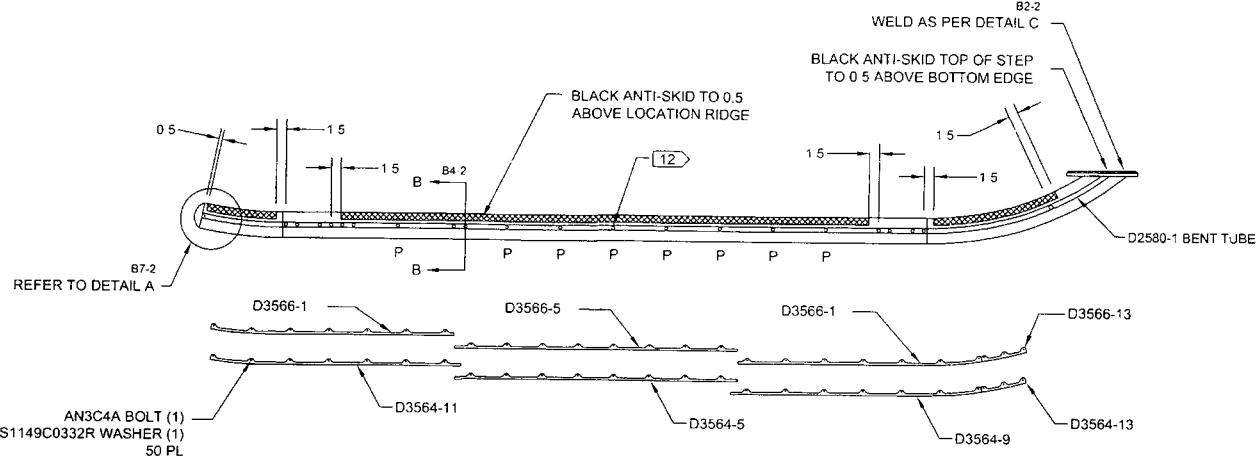
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

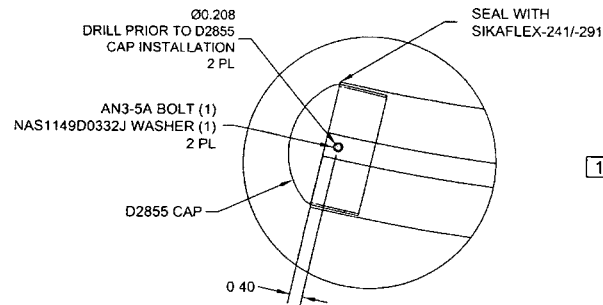
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

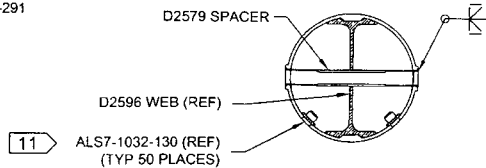


D2580-041 ASSEMBLY DETAIL

DETAIL A C7-2  
SCALE 5X

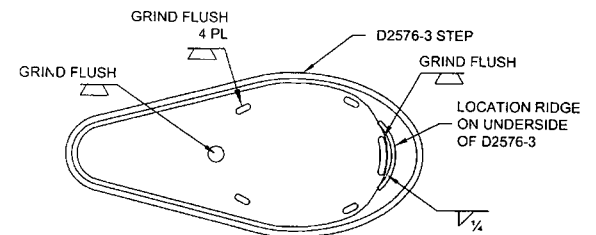


D5-2  
SECTION B-B  
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (20 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL C D3-2  
SCALE 5X



DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG APPR	11	D2580	SHEET 2 OF 8
APPROVED	12	TITLE	SCALE
DE APPR	13	205 SKIDTUBE ASSEMBLY	NTS
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

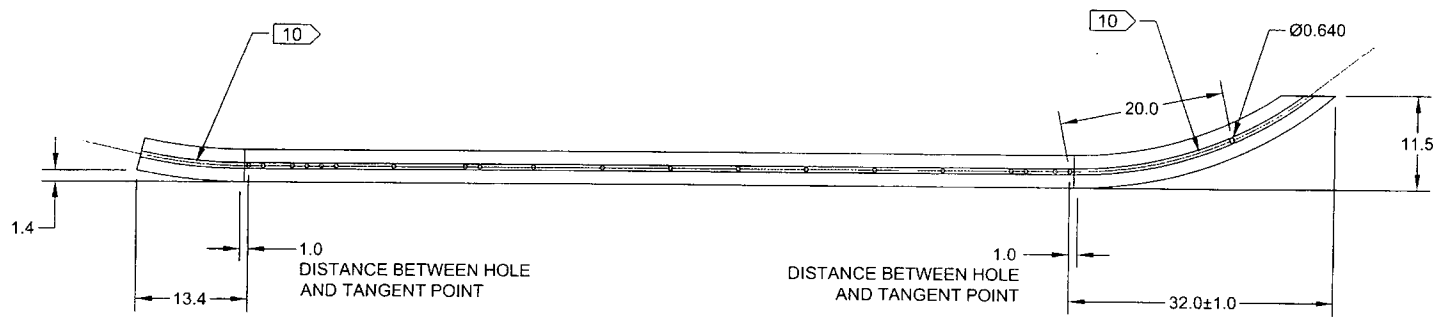
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

g5819



D2580-1 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED  
2011-08-28  
JW

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 3 OF 8
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
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**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

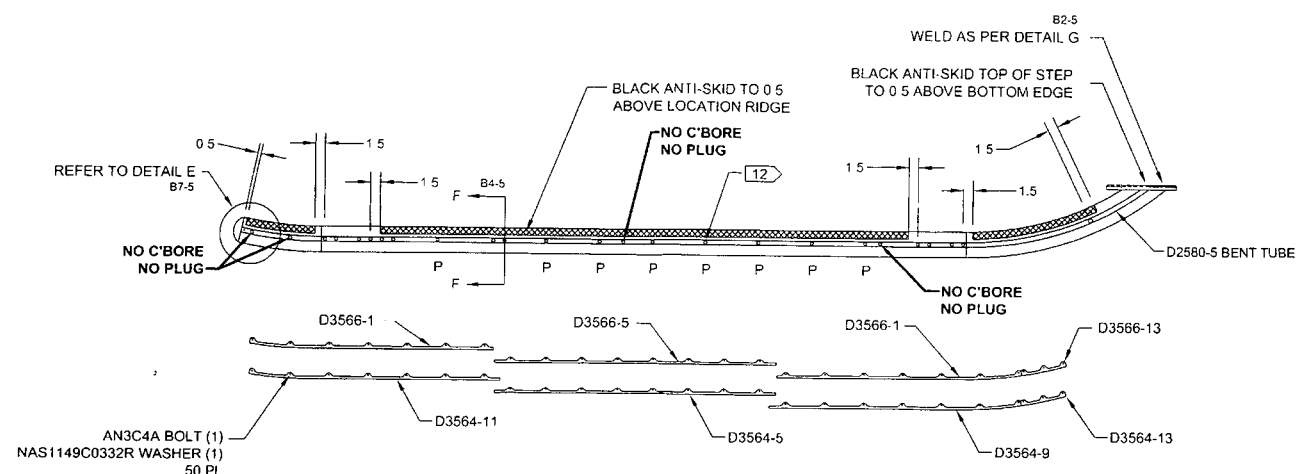
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

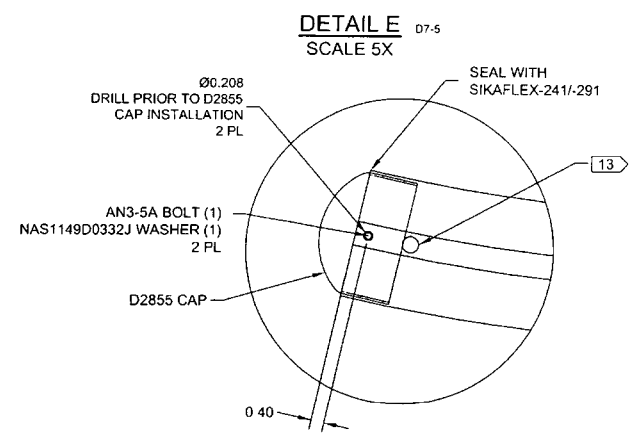


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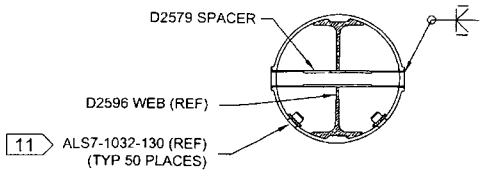


**D2580-045 ASSEMBLY DETAIL**

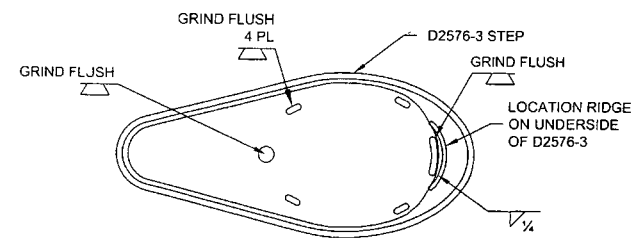
DEO ATTACHED  
RELEASED  
R 2011-08-29  
WNP



**SECTION F-F D5-5 SCALE 5X**



AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY  
1. CHAMFER HOLE 0.050 X 45°  
2. INSERT D2579 SPACER (24 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	4	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 4 OF 8
APPROVED	10	TITLE	SCALE
DE APPR	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR COMMUNICATED TO ANY OTHER PERSON, WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

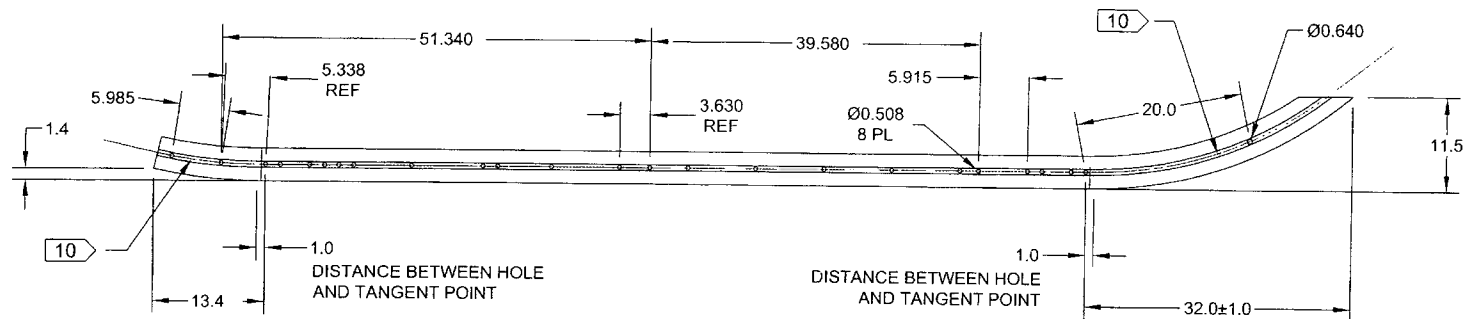
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

25819



D2580-5 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED  
2011-08-29

DESIGN	#	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	AP	DRAWING NO	REV. E
MFG. APPR	AP	D2580	SHEET 5 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR	AP	205 SKIDTUBE ASSEMBLY	NTS
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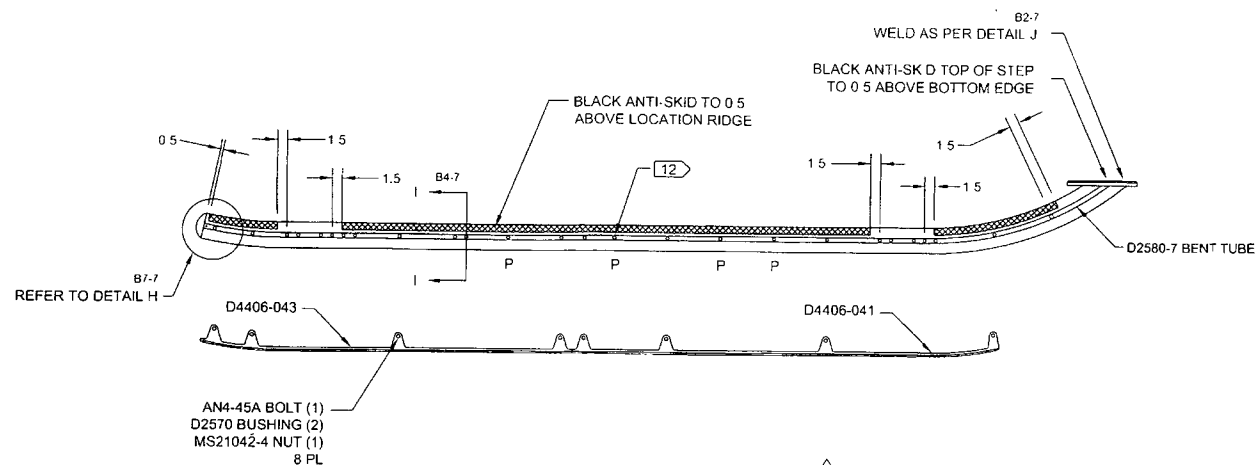
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

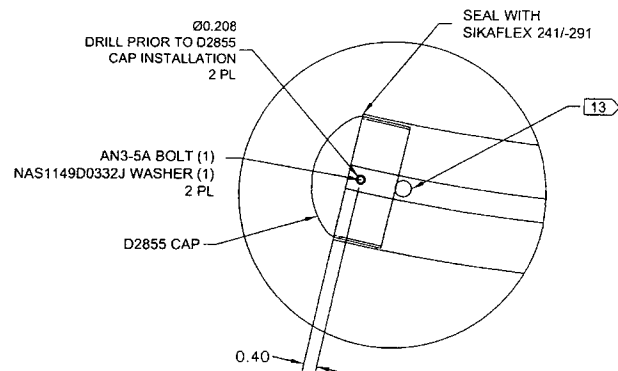
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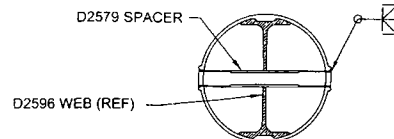
D2580-047 ASSEMBLY DETAIL 

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2011-08-29

DETAIL H C6-7  
SCALE 5X



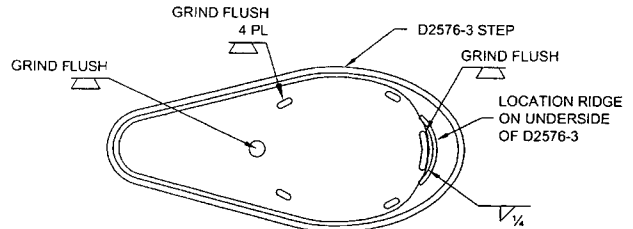
SECTION I-I D5-7  
SCALE 5X



**AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0 508 HOLES ONLY**

- 1. CHAMFER HOLE 0.050 X 45°**
- 2. INSERT D2579 SPACER (25 PLACES)**
- 3. WELD INTO PLACE AND GRIND FLUSH**
- 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP**

DETAIL J D3-1  
SCALE 5X



DESIGN	<del>4</del>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO	REV. E
MFG. APPR.	<del>4</del>	D2580	SHEET 6 OF 8
APPROVED	<del>4</del>	TITLE	SCALE
DE APPR	<del>4</del>	205 SKIDTUBE ASSEMBLY	NTS
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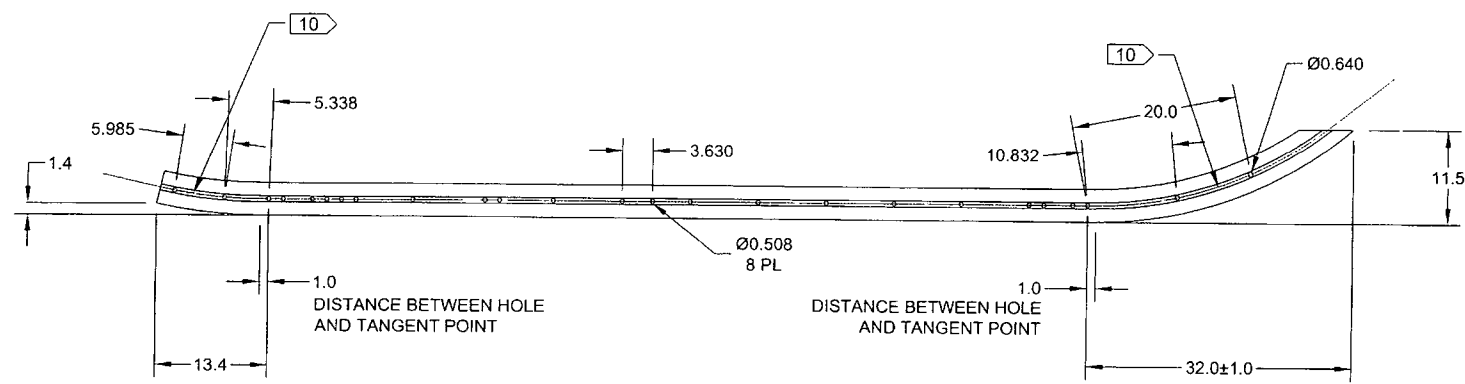
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

25819



D2580-7 BENT TUBE  
(MAKE FROM D2580-101 TUBE)



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2011-08-29  
AND

DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	10	DRAWING NO	REV. E
MFG. APPR.	10	D2580	SHEET 7 OF 8
APPROVED	10	TITLE	SCALE
DE APPR	10	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
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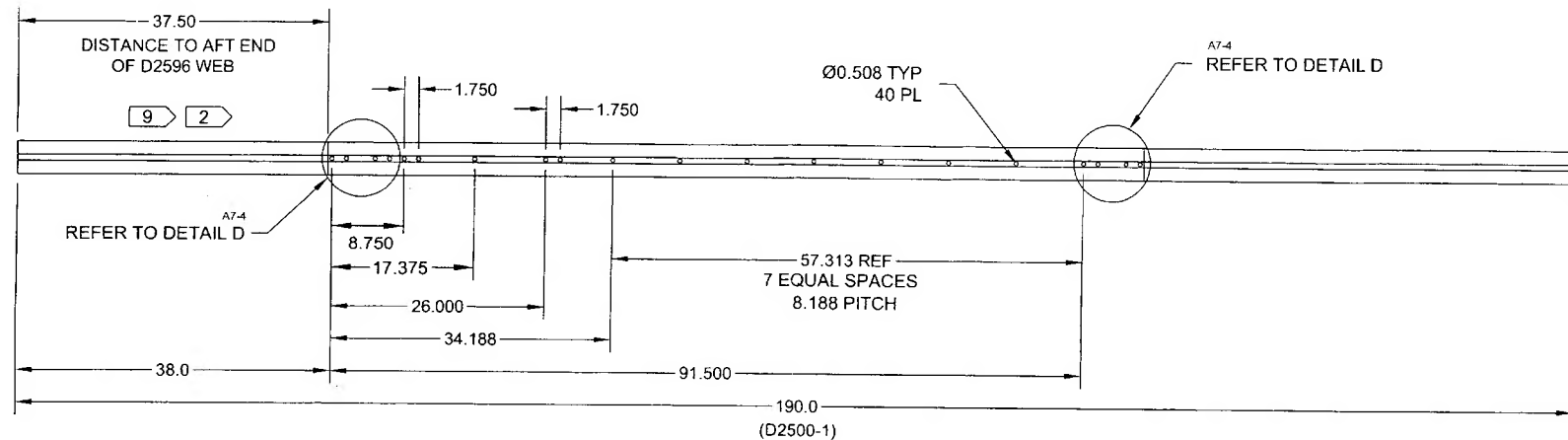
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

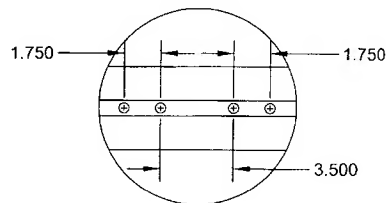
**NOTE:** Date & initial all entries



85819



D2580-101 TUBE



DETAIL D D3-4  
SCALE 5X C7-4

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2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	#	DRAWING NO.	REV. E
MFG. APPR.	#	D2580	SHEET 8 OF 8
APPROVED	#	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR DISCLOSED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	<b>DART AEROSPACE LTD ENGINEERING ORDER</b>	D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>EC</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		

**PURPOSE:**

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

*25819*

**CHANGE:**

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

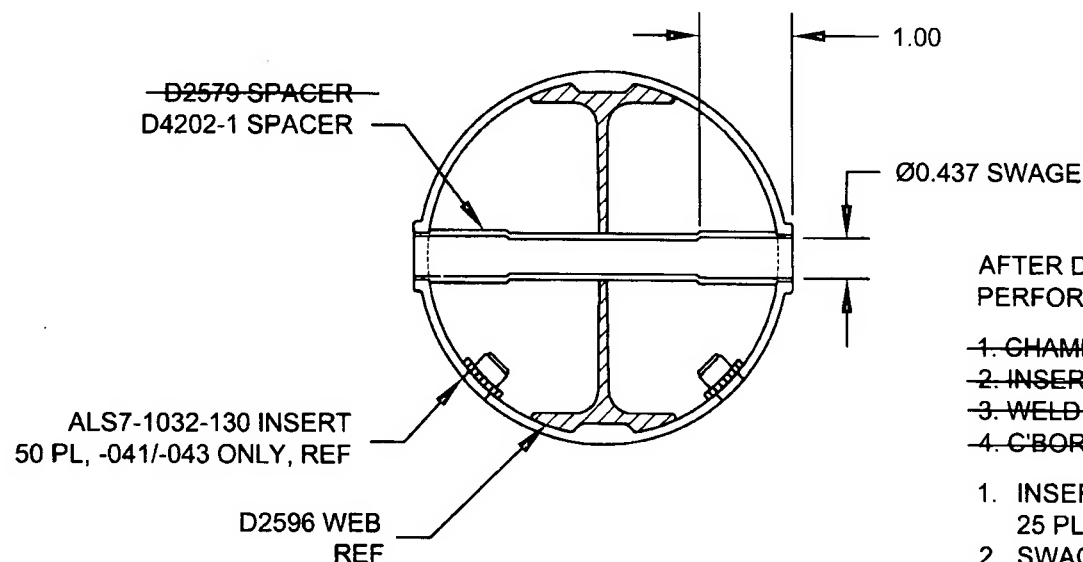
	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

**\* FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG  
IN LOCATIONS MARKED "NO C'BORE".  
REF SHEET 4 OF DWG.

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS  
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

**RELEASED**  
2011-12-14 *[Signature]*



AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.050 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

**SECTION B-B, F-F, I-I**  
NOT TO SCALE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries